SITE MONITORING

Liebert
Keeping Business in Business

RCM4

Remote Contact Monitor

USER MANUAL

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NOTE

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

NOTE

When the following symbols are displayed, they indicate:

a. Earth grounding conductor

b. Alternating Current

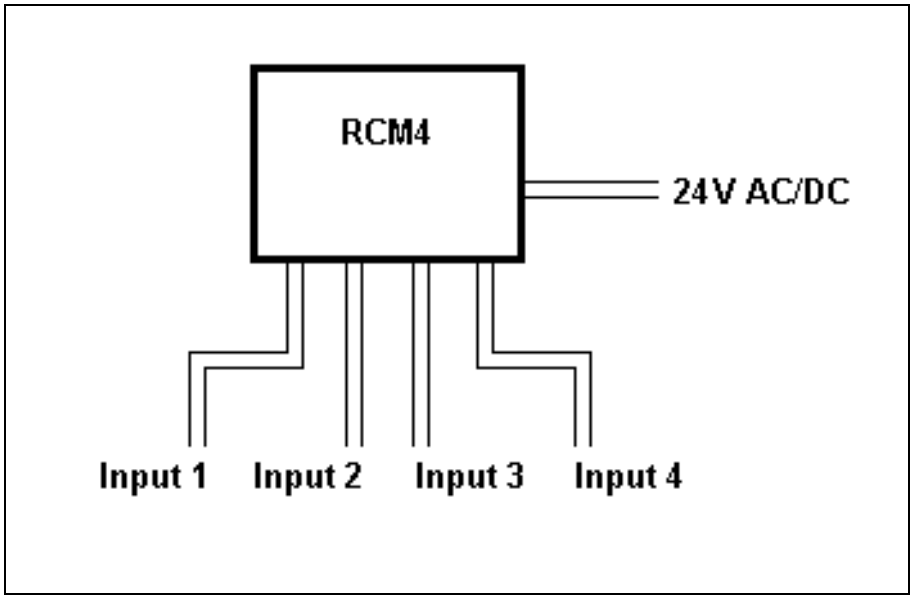

Figure 1. Typical System Configuration

Section 1: INTRODUCTION

The Liebert RCM4 is a basic alarm panel. This device monitors four sets of non-powered, normally open (N.O.) contacts. In response to detection of an alarm, the RCM4 activates a LED; optionally, it also activates an audible alarm and a common alarm output. All interconnections are Class 2 circuits.

The unit is configured for latching or non-latching operation, and the Form-C common alarm output can operate in supervised or unsupervised mode.

The only user control is the Silence/Reset button.

The RCM4 may monitor contact-closures from a Liebert unit, or any generic sensor or signalling device that provides N.O. contacts as output.

Specifications

Electrical Specifications:

Voltage:	24 VAC/DC, +/-10% of nominal
Power:	6 VA
Phase:	1
Frequency:	50/60 Hz

Environmental Conditions:

Operating Temperature:	5°C to 40°C
Operating Relative Humidity:	0% to 95% (non-condensing)
Operating Altitude:	up to 2000 meters

Dimensions:

6.5”H x 6.5”W x 3.1”D	3.2 lbs
165mm x 165mm x 78mm	1.45 kg

Agency Approvals:

UL873 - Temperature-Indicating and Regulating Equipment

Section 2: INSTALLATION

Mounting

The RCM4 is designed for wall-mounting on a finished interior wall. Separate the display module from the base plate by removing (3) screws -- (2) on top, (1) on bottom of unit. Save screws for use later in re-assembly. Using appropriate tools, remove conduit knock-outs as necessary. Knock-outs are provided on the top and rear surfaces.

Using the base plate as a template if necessary, locate and drill (2) mounting holes. Refer to Figure 2. Using #10 screws, affix base plate to interior wall. Ensure base plate is secure and level.

Pull all necessary power and signal wires through knock-outs on base plate prior to connecting to display module. Refer to sub-section on Electrical Connections. Ensure all interconnects are in place before re-attaching the display module to base plate.

Call Liebert Environmental Support at 1-800-543-2778 if assistance is required for the installation or operation of the RCM4 remote contact monitor.

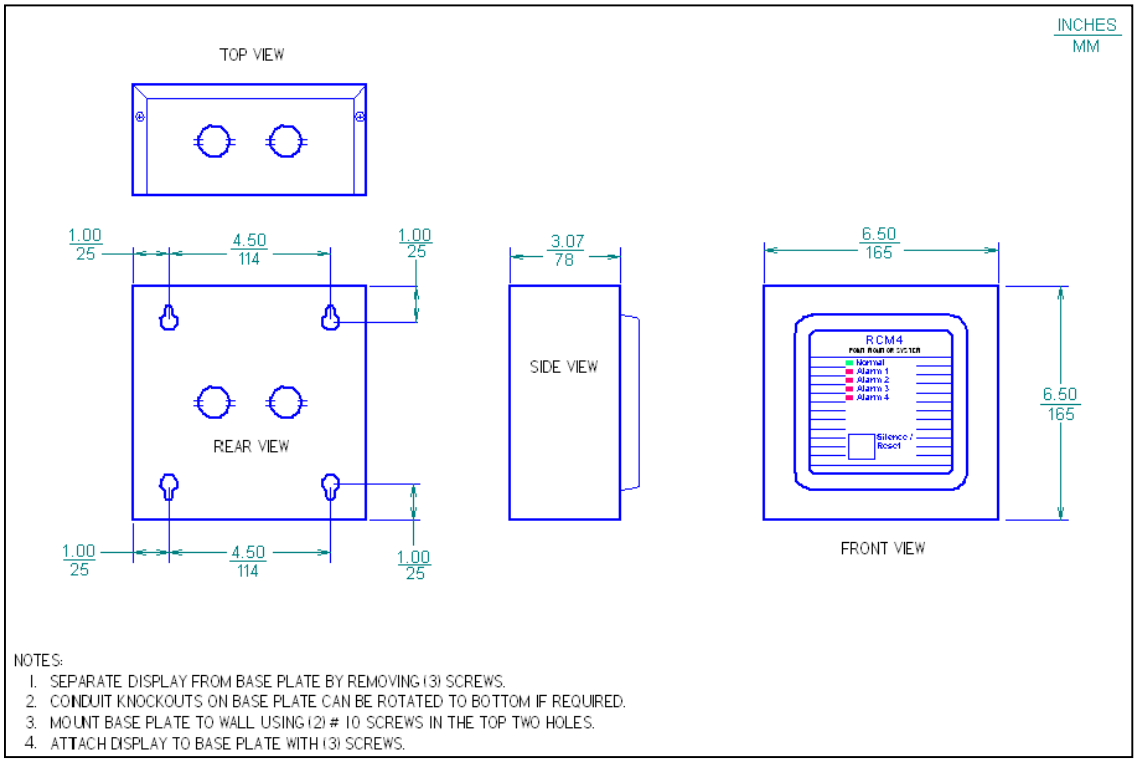

Figure 2: Enclosure and Mounting Dimensions

Electrical Connections

Wiring considerations for the RCM4 can be partitioned into (3) categories: alarm inputs; common alarm output; power. Refer to Figure 3.

Note: *Minimum 20AWG wiring recommended for all field connections.*

Alarm input #1 is wired to TB1-1 and TB1-2; alarm input #2 is wired to TB1-3 and TB1-4; alarm input #3 is wired to TB1-5 and TB1-6; alarm input #4 is wired to TB1-7 and TB1-8. Each input is connected to a normally-open (N.O.) contact; upon closure of this contact, the RCM4 signals an alarm condition. It is recommended that the RCM4 be placed no further than 300 feet (100 meters) from the signalling device.

The RCM4 provides a Common Alarm Output, at TB3. This Form-C dry-contact is rated for Class 2 circuits 24VAC @ 3A. Note that the common alarm can be wired for supervised or unsupervised operation.

Power for the RCM4 is supplied to TB2-1 and TB2-2. Maximum current draw is 0.25A at 24V AC/DC. It is strongly recommended that the RCM4 be powered independently by an external transformer.

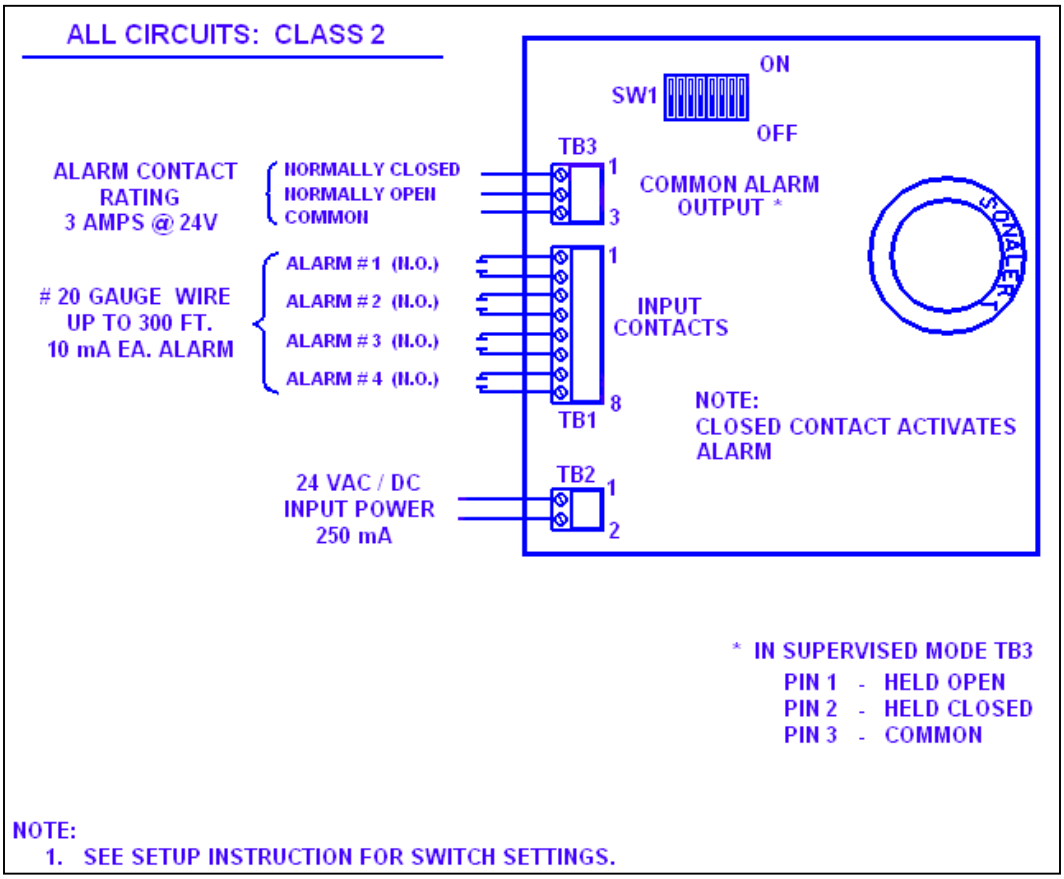

Figure 3: Connection Diagram

Section 3: HARDWARE CONFIGURATION

DIP Switch Settings

The following user selectable operations are set by **DIP SW1** on the display circuit board: Refer to Table 1 and Figure 2.

Position	OFF	ON
1	Alarm #1 Unlatched	Alarm #1 Latched
2	Alarm #2 Unlatched	Alarm #2 Latched
3	Alarm #3 Unlatched	Alarm #3 Latched
4	Alarm #4 Unlatched	Alarm #4 Latched
5	Audible Alarm Disabled	Audible Alarm Enabled
6	See Note 1	Unsupervised Common Alarm Output
7	See Note 1	Supervised Common Alarm Output
8	Normal Mode of Operation	Test Mode See Note 2

Table 1: DIP Switch Settings

Notes:

1. Position #6 and #7 cannot be ON at the same time. If 6 and 7 are both OFF, common alarm relay is disabled. Supervised common alarm relay is energized on power up; unsupervised relay is energized on detection of alarm.
2. Position #5 must be ON to test audible alarm. LEDs and Audible Alarm Tested (only the LEDs that are in the latched mode).

Section 4: OPERATION

There are two basic modes of operation for the RCM4 – latched or unlatched. The following subsections detail the respective operation sequences.

Latched Operation

When an external alarm contact closes, the RCM4 latches the alarm indicator (LED), latches the audible alarm, and activates the common alarm output. The audible alarm will continue to sound until the SILENCE/RESET button is pressed, regardless whether the alarm condition has cleared itself or not. The common alarm output always tracks the status of the inputs. However, the behavior of the alarm LED is more complex; the following two examples illustrate the subtle differences.

Example 1: Latched/Silence before alarm clears.
When the SILENCE/RESET switch is pressed while an alarm is active, only the audible alarm will be silenced. The alarm indicator will remain on until the input alarm condition is cleared.

Event	Alarm Input	NORMAL Status LED	ALARM Status LED	Common Alarm	Audible Alarm
1	No Alarms	Green	Unlit	Not Active	Off
2	Contact Closes Alarm Active	Unlit	Red	Active	On
3	Alarm Stays Active; SILENCE/RESET pressed	Unlit	Red	Active	Off
4	Alarm Clears	Green	Unlit	Not Active	Off

Example 2: Latched/Silence after alarm clears.
When the alarm condition clears itself before the SILENCE/RESET switch is pressed, the alarm LED and audible alarm will continue to be active until user acknowledgement. The common alarm output tracks the alarm input; thus it will be de-activated when the alarm condition clears.

Event	Alarm Input	NORMAL Status LED	ALARM Status LED	Common Alarm	Audible Alarm
1	No Alarms	Green	Unlit	Not Active	Off
2	Contact Closes Alarm Active	Unlit	Red	Active	On
3	Alarm Clears	Green	Red	Not Active	On
4	SILENCE/RESET pressed	Green	Unlit	Not Active	Off

Unlatched Operation

The common alarm output, alarm indicators, and audible alarm track the input alarm condition. If an alarm is present and the Silence/Reset switch is pressed, then only the audible alarm is silenced. If a new alarm is detected, the audible alarm is re-triggered for the new occurrence.

Example 3: Unlatched/Silence before alarm clears.
When the SILENCE/RESET switch is pressed while an alarm is active, only the audible alarm will be silenced. The alarm indicator will remain on until the input alarm condition is cleared. There is no functional difference between latched and unlatched modes when alarms are acknowledged while they are active.

Event	Alarm Input	NORMAL Status LED	ALARM Status LED	Common Alarm	Audible Alarm
1	No Alarms	Green	Unlit	Not Active	Off
2	Contact Closes Alarm Active	Unlit	Red	Active	On
3	Alarm Stays Active; SILENCE/RESET pressed	Unlit	Red	Active	Off
4	Alarm Clears	Green	Unlit	Not Active	Off

Example 4: Unlatched/Alarm clears prior to Silence.
When the alarm condition clears itself before the SILENCE/RESET switch is pressed in the unlatched mode, the visible and audible alarms will automatically reset without user intervention. This is the main difference between the latched and unlatched modes of operation.

Event	Alarm Input	NORMAL Status LED	ALARM Status LED	Common Alarm	Audible Alarm
1	No Alarms	Green	Unlit	Not Active	Off
2	Contact Closes Alarm Active	Unlit	Red	Active	On
3	Alarm Clears	Green	Unlit	Not Active	Off

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THE COMPANY BEHIND THE PRODUCTS

With more than 500,000 installations around the globe, Liebert is the world leader in computer protection systems. Since its founding in 1965, Liebert has developed a complete range of support and protection systems for sensitive electronics:

- Environmental systems: close-control air conditioning from 1.5 to 60 tons.
- Power conditioning and UPS with power ranges from 250 VA to more than 1000 kVA.
- Integrated systems that provide both environmental and power protection in a single, flexible package.
- Monitoring and control – on-site or remote – from systems of any size or location.
- Service and support, through more than 100 service centers around the world, and a 24-hour Customer Response Center.

LIEBERT CORPORATION

1050 DEARBORN DRIVE
P.O. BOX 29186
COLUMBUS, OHIO 43229
800.877.9222 PHONE
614.841.6022 FAX

LIEBERT EUROPE

GLOBE PARK
MARLOW
BUCKINGHAMSHIRE SL7 1YG
UNITED KINGDOM
+44.1628.403200 PHONE
+44.1628.403203 FAX

LIEBERT ASIA

19/F, CAUSEWAY BAY PLAZA
489 HENNESSY ROAD
CAUSEWAY BAY
HONG KONG
852.2.572.2201 PHONE
852.2.831.0114 FAX

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SL-31022 (Rev1, 10/99) Printed in U.S.A.